WHAT IS CLAIMED IS:

1. A method of emulating machine tool behavior for a programmable logic controller logical verification system for manufacturing a motor vehicle, said method comprising the steps of:

constructing a mechanical model;

viewing motion of the mechanical model in a motion viewer;

determining whether the motion of the mechanical model is acceptable;

replicating the motion previously defined with PLC code if the motion of the mechanical model was acceptable; and

using the accepted motion of the mechanical model to compare the behavior of the PLC code relative to the accepted motion.

2. A method as set forth in claim 1 wherein said step of constructing comprises using a mechanical tool design system to construct the mechanical model.

3. A method as set forth in claim 2 including the step of constructing an electromechanical model.

4. A method as set forth in claim 3 wherein said step of constructing the mechanical model includes binding the electromechanical model to the mechanical model.

5. A method as set forth in claim 4 wherein said step of constructing the electromechanical model comprises using a PLC logical verification system to construct the electromechanical model.

6. A method as set forth in claim 1 including the step of generating transformational arrays based on computer aided design (CAD) geometries of the mechanical model.

7. A method as set forth in claim 6 including the step of exporting the mechanical model to a control system design system.

8. A method as set forth in claim 7 including the step of constructing a motion file based on the mechanical model and transformational arrays.

9. A method as set forth in claim 8 wherein said step of displaying further comprises playing the motion file by a motion player.

10. A method as set forth in claim 8 including the step of returning to the mechanical tool design system if the motion of the mechanical model is not acceptable.

11. A method of emulating machine tool behavior for a programmable logic controller logical verification system for manufacturing a motor vehicle, said method comprising the steps of:

constructing a mechanical model;

generating CAD transformational arrays for motion in the mechanical model;

constructing a motion file based on the mechanical model and the CAD transformational arrays;

viewing the motion of the motion file in a motion viewer;

determining whether the motion of the mechanical model is acceptable;

replicating the motion previously defined with motion commands initiated by PLC code if the motion of the mechanical model was acceptable; and

using the accepted motion of the mechanical model to compare the behavior of the PLC code to the accepted motion.

12. A method as set forth in claim 11 wherein said step of constructing comprises using a mechanical tool design system to construct the mechanical model.

13. A method as set forth in claim 12 including the step of constructing an electromechanical model.

14. A method as set forth in claim 13 wherein said step of constructing the mechanical model includes binding the electromechanical model to the mechanical model.

15. A method as set forth in claim 14 wherein said step of constructing the electromechanical model comprises using a control system design system to construct the electromechanical model.

16. A method as set forth in claim 11 wherein said step of generating comprises generating CAD transformational arrays based on computer aided design (CAD) geometries of the mechanical model.

17. A method as set forth in claim 11 including the step of exporting the mechanical model to a PLC emulator.

18. A method as set forth in claim 11 wherein said step of displaying further comprises playing the motion file by a motion player.

19. A method as set forth in claim 11 including the step of returning to the mechanical tool design system if the motion of the mechanical model is not acceptable.